

AMENDMENTS TO CLAIMS

Claims 1-13 (canceled)

14. (original) An information recording apparatus for recording a sequence of sync frames, indicative of data, onto tracks of an optical recording medium in which prepits are formed on lands between the tracks at given intervals, and in which sync patterns, providing synchronization on a sync-frame basis, are inserted in the sync frames such that each sync pattern has a length in a track direction larger than a length of one of the prepits and a position of each sync pattern matches with a position of at least one of the prepits, the information recording apparatus comprising:

first sync information generating means for generating first codes that represent first sync patterns for a portion of the sync frames such that each first sync pattern is formed as a space on the recording medium;

second sync information generating means for generating second codes that represent second sync patterns for the remainder of the sync frames such that each second sync pattern is formed on the recording medium so as to meet a low-frequency reduction scheme;

sync information selecting means for selecting one of the first codes generated by the first sync information generating means and the second codes generated by the second sync information generating means;

prepit position signal detecting means for detecting a prepit position signal from one of the prepits for each of the sync frames during the writing of the recording pulses to the recording medium;

write position signal generating means for generating a write-position start signal based on the prepit position signal detected by the prepit position signal detecting means; and

data encoding means for generating modulation codes based on the sync frames in which the codes selected by the sync information selecting means are inserted, by modulating the sync frames containing the selected codes in accordance with a predetermined modulation scheme, the data encoding means generating a sequence of recording pulses by converting the modulation codes through a predetermined conversion scheme, and the data encoding means starting outputting the sequence of recording pulses in accordance with the write-position start signal supplied by the write position signal generating means.

15. (original) The information recording apparatus according to claim 14, wherein the prepit position signal detecting means detects a prepit position signal from a sync prepit of the prepits for one of the sync frames, and the write position signal generating means generates a write-position start signal based on the detected prepit position signal, and the sync information selecting means is configured to select the first codes when a position of one of the sync patterns on the track adjacent to the land where the sync prepit is formed, matches with a position of the sync prepit, and otherwise to select the second codes.

16. (original) An optical recording medium for use in an information recording apparatus which records a sequence of sync frames, indicative of data, onto tracks of the recording medium, comprising:

prepits provided on lands between the tracks at given intervals, the prepits being indicative of address information; and

sync patterns provided in at least a portion of the sequence of sync frames, the sync patterns providing synchronization on a sync-frame basis, such that each sync pattern has a length in a track direction larger than a length of one of the prepits and a position of each sync pattern matches with a position of at least one of the prepits.

17. (original) The optical recording medium according to claim 16, wherein the recording medium includes a sync prepit of the prepits for one of the sync frames, the sync prepit allowing the information recording apparatus to detect a prepit position signal during the writing of the recording pulses to the recording medium, and the information recording apparatus generates a write-position start signal based on the detected prepit position signal, such that the sync pattern on the track adjacent to the land where the sync prepit is formed, the position of the sync pattern matching with the position of the sync prepit, is formed as a space on the recording medium.